Installation Instructions for 81601 Plasma Cutter

Thank you for purchasing our products. Please read user manual carefully before using.

We are dedicated to providing you with the best possible equipment and service to meet the demanding jobs that you have. We want to go beyond delivering a satisfactory product to you. That is the reason we offer technical support to assist you with your needs should an occasion occur. With proper use and care your product should deliver years of trouble free service.

Safe operation and proper maintenance is your responsibility.
We have compiled this operator's manual, to instruct you in basic safety, operation and maintenance of your product to give you the best possible experience. Please carefully read this manual before you operate your unit. This manual is not only for the use of the machine, but to assist in obtaining the best performance out of your unit. Do not operate the unit until you have read this manual and you are thoroughly familiar with the safe operation of the unit.

The warranty does not cover improper use, maintenance or consumables. Do not attempt to alter or defeat any piece or part of your unit, particularly any safety device. Keep all shields and covers in place during unit operation should an unlikely failure of internal components result in the possible presence of sparks and explosions. If a failure occurs, discontinue further use until malfunctioning parts or accessories have been repaired or replaced by qualified personnel.

Note on High Frequency electromagnetic disturbances:

- Certain welding and cutting processes generate High Frequency (HF) waves.
- These waves may disturb sensitive electronic equipment such as televisions, radios, computers, cell phones, and related equipment. High Frequency may also interfere with fluorescent lights. Consult with an electrician if disturbance is noted. Sometimes, improper wire routing or poor shielding may be the cause.

HF can interfere with pacemakers. See EMF warnings in following safety section for further information. Always consult your physician before entering an area known to have welding or cutting equipment if you have a pacemaker.

WARNING! Persons with pacemakers should not weld, cut or be in the welding area until they consult with their physician. Some pacemakers are sensitive to EMF radiation and could severely malfunction while welding or while being in the vicinity of someone welding. *Serious injury or death may occur!*

Welding and plasma cutting processes generate electromagnetic fields and radiation. While the effects of EMF radiation are not known, it is suspected that there may be some harm from long term exposure to electromagnetic fields. Therefore, certain precautions should be taken to minimize exposure:

- Lay welding leads and lines neatly away from the body.
- Never coil cables around the body.
- Secure cables with tape if necessary to keep from the body.
- Keep all cables and leads on the same side the body.
- Never stand between cables or leads.
- Keep as far away from the power source (welder) as possible while welding.
- Never stand between the ground clamp and the torch.
- Keep the ground clamp grounded as close to the weld or cut as possible.

Welding and cutting processes pose certain inhalation risks. Be sure to follow any guidelines from your chosen consumable and electrode suppliers regarding possible need for respiratory equipment while welding or cutting. Always weld with adequate ventilation. Never weld in closed rooms or confined spaces. Fumes and gases released while welding or cutting may be poisonous. Take precautions at all times.

Any burning of the eyes, nose or throat are signs that you need to increase ventilation.

Stop immediately and relocate work if necessary until adequate ventilation is obtained.

Stop work completely and seek medical help if irritation and discomfort persists.

WARNING! Do not weld on galvanized steel, stainless steel, beryllium, titanium, copper, cadmium, lead or zinc without proper respiratory equipment and or ventilation.

WARNING! Do not weld or cut around Chlorinated solvents or degreasing areas. Release of Phosgene gas can be deadly. Consider all chemicals to have potential deadly results if welded on or near metal containing residual amounts of chemicals.

Keep all cylinders upright and chained to a wall or appropriate holding pen. All cylinders have a potential explosion hazard. When not in use, keep capped and closed. Store chained so that overturn is not likely. Transporting cylinders incorrectly can lead to an explosion. Do not attempt to adapt regulators to fit cylinders. Do not use faulty regulators. Do not allow cylinders to come into contact with work piece or work. Do not weld or strike arcs on cylinders. Keep cylinders away from direct heat, flame and sparks.

WARNING! Electrical shock can kill. Make sure all electrical equipment is properly grounded. Do not use frayed, cut or otherwise damaged cables and leads. Do not stand, lean or rest on ground clamp. Do not stand in water or damp areas while welding or cutting. Keep work surface dry. Do not use welder or plasma cutter in the rain or in extremely humid conditions. Use dry rubber soled shoes and dry gloves when welding or cutting to insulate against electrical shock. Turn machine on or off only with gloved hand. Keep all parts of the body insulated from work, and work tables. Keep away from direct contact with skin against work.

All work cables, leads, and hoses pose trip hazards. Be aware of their location and make sure all personnel in area are advised of their location. Taping or securing cables with appropriate restraints can help reduce trips and falls.

WARNING! Fire and explosions are real risks while welding or cutting. Always keep fire extinguishers close by and additionally a water hose or bucket of sand. It is a good idea to have someone help watch for possible fire while you are welding. Sparks and hot metal may travel a long distance. They may go into cracks in walls and floors and start a fire that would not be immediately visible.

Metal is hot after welding or cutting! Always use gloves and or tongs when handling hot pieces of metal. Remember to place hot metal on fireproof surfaces after handling. Serious burns and injury can result if material is improperly handled.

WARNING! Faulty or poorly maintained equipment can cause injury or death. Proper maintenance is your responsibility. Make sure all equipment is properly maintained and serviced by qualified personnel. Do not abuse or misuse equipment.

Keep all covers in place. A faulty machine may shoot sparks or may have exploding parts. Touching uncovered parts inside machine can cause discharge of high amounts of electricity. Do not allow employees to operate poorly serviced equipment. Always check condition of equipment thoroughly before start up.

Disconnect unit from power source before any service attempt is made and for long term storage or electrical storm.

AMP OUTPUT RANGE	OUTPUT VOLTAGE	WEIGHT	DUTY CYCLE	ELECTRICAL INPUT	AIR REQUIREMENTS
20-60a	260V DC	15KGS	60%@60A	220V AC	60-70PSI

Operation:

1. Before attempting to use this unit on an actual project or object of value, practice on a similar material as there is a moderate learning curve necessary before achieving proficiency in cutting.

2. Place the ground cable clamp on a clean, bare area of your work piece. Scrape, wire brush, file or grind a bare area if necessary to achieve a good ground.

3. Set air pressure to the appropriate pressure with the knob located at the upper right side of the front panel. The pressure indicating gauge is located directly above the air pressure knob and is generally set at 60 to 70 psi. The actual pressure required is dictated by the thickness of the metal being cut. Lower pressure for thinner metals, higher pressure for thicker or harder metals.

4. Set the output amperage knob located at the center of the upper panel to an appropriate setting base on the thickness of the metal being cut. Lower amperage for thinner metals, higher amperage for thicker metals, keep in mind that more is not always better as too high of an amperage setting will result in overheating of the unit and excessive molten discharge from the cut.

5. Make sure that all your safety wear is in place and the area is completely free of flammable material.

6. The best results are achieved by holding the tip at a 90° angle to the cut line.

7. With practice, you will be able to exercise precise control over this extremely powerful device, harnessing it's energy to create clean, precise and intricate cuts in many forms of steel and iron up to 5/8" thick.

8. While you practice, experiment with different speeds. You will find that thinner materials will allow a faster motion while thicker materials will require a slower motion to achieve a through cut.

9. A good form of practice is to attempt a series of straight lines while creating the cleanest edge with a minimum of molten material remaining on the cut edge. This minimizes the cleanup of the edge with a grinder or file. Another excellent technique is to practice cutting your initials out of a piece of steel.

Care and Maintenance

It is extremely important that the air supply be clean and dry. A separate moisture trap, water/oil separator or desiccant system should be used. The plasma cutter has a built - in "last-chance" moisture separator which requires draining each time you have completed work with the unit. This feature is located on the underside rear corner and is drained by keeping the unit level and gently pulling down on the drain fitting.

Constantly inspect the torch tip for excessive erosion, molten metal accumulation or burning. If damaged, it must be replaced.

Before each use, inspect all electrical connections, cables, supply line, torch, air supply, housing and controls for damage. If any damage or ware is noted, DO NOT USE THE UNIT.

Always store the unit in a safe, clean and dry environment.

Note:

Consumers must be careful to not overtighten the air/gas fitting on the Cut 60 gas receptacle located on the back of the unit when connecting the unit to air/gas.

Over tightening will possibly shift the air/water separator inside the unit. Shifting of the air/water separator may cause the relief valve on the air/water separator to be depressed resulting in failure to pressurize and the sound of leaking air when trying to pressurize. If the air/water separator has shifted and the system will not pressurize the problem is easily corrected by re-centering the air/water separator relief valve in relation to the vent hole located on the bottom of the unit by un torqueing the gas receptacle on the back of the unit to its original location allowing the air/water separator to be centered in its relief hole on the bottom of the unit.

TROUBLE:	CAUSE/SOLUTION
Machine will not turn on.	Check cords and plug wiring. Occasionally a terminal screw will loosen after installation and use. Check for proper wiring at plug and receptacle. Check circuit breaker. If no fault is found, contact us for support.
Machine runs, but will not cut.	Check for a good work clamp connection. Make sure work piece cable and plasma torch is securely fastened to lug. Check that the Track torch Auto/Standard switch is in the correct position for type of use desired. Check fuse.
Electrodes and tips are rapidly consumed.	Inadequate air flow. Water in air supply. Poor cutting technique. Return to stand off cutting of no more than 1/8", not less than 1/16". Check and tighten consumables.
Heavy slag on the underside of the cut with complete cut through.	Travel speed too slow. Either increase cutting speed or reduce cutting amperage to fit metal thickness. Too much standoff (more than 1/8 inch). Worn consumables. Low air pressure. (Do not exceed 70 psi)
Plasma cut is beveled on one side.	Plasma cutters tend to leave a slightly beveled side (up to 5 degrees). However, decreasing the standoff and increasing air pressure can help reduce or eliminate problems. Worn Consumables. Replace consumables.
Air pressure light does not illuminate, (some models) or air is heard escaping inside unit.	Over pressurized supply line. Internal leakage around air fittings. Consult with support for repair instructions if needed. No air supply.
Cut quality is poor or irregular.	Check and adjust settings. Increase or decrease air pressure. Check for consumable wear and tightness.
Unstable Plasma Arc.	Poorly grounded unit or worn electrode.
Surrounding lights or electronic equipment malfunctions.	Use high frequency ground connected to an exterior ground rod to drain electromagnetic frequencies. Use a shielded wire to drain if necessary. Consult local electrician/codes.